

Facts, Findings and Recommendations - Part 1

Oklahoma and Southern Kansas Outbreak Combined

National Centers for Environmental Prediction Guidance, Products and Services

- FACT:** The 11:15 a.m., May 3, 1999, SPC Day 1 Severe Weather Outlook (SWO) was upgraded to a moderate risk for severe thunderstorms in the Oklahoma/Kansas outbreak area based on 7 a.m. soundings, midday profiler observations and Rapid Update Cycle II (RUC II) forecasts of instability and shear.
- FACT:** The SPC began an Experimental Probabilistic Outlook in the spring of 1999. The forecast is made available on the SPC Forecast Products Web Page. The Experimental Probabilistic Outlook issued at 3 p.m. for Oklahoma and southern Kansas highlighted a significant chance for F2 or greater tornadoes.
- Finding 1:** From mid-morning to mid-afternoon on May 3, 1-hour, 250-meter interval vertical wind profiles from the profiler at Tucumcari, New Mexico, showed a descending and strengthening jet approaching Oklahoma. The jet was deeper, stronger and lower in the atmosphere than forecasts from numerical models and favored development of supercells. It was profiler data that led SPC forecasters to upgrade the SWO from moderate to high risk for severe weather in the outbreak area and caused F2 or stronger tornadoes to be highlighted in the Experimental Probabilistic Outlook (see FACT above). In the opinion of the Service Assessment Team, without profiler data, SPC forecasters would not have upgraded from moderate to high risk. Also, the state of readiness of NWS offices, emergency managers, and the media in the severe weather outbreak area would not have been as high. The profiler network is “experimental” and not funded by the NWS.
- Recommendation 1:** The NWS should make a decision on how to support the existing profiler network so that the current data suite becomes a reliable, operational data source.
- FACT:** Tornado Watch #195 for western and central Oklahoma, including Oklahoma City, was issued at 4:30 p.m., valid 4:45 p.m. to 10 p.m. The first severe thunderstorm warning was issued by NWSFO Norman at

4:15 p.m. Based on Weather Surveillance Radar-1988 Doppler (WSR-88D) radar signatures, the first tornado warning followed at 4:47 p.m.

FACT:

Tornado Watch #200 for Kansas, including Wichita, was issued at 7:21 p.m., valid from 7:30 p.m. until 12 midnight. NWSO Wichita issued its first tornado warning at 7:38 p.m. (Sumner County), a severe thunderstorm warning for Sedgwick County at 7:49 p.m., and a tornado warning for Sedgwick County at 8:16 p.m.



Total destruction of a residential area in Moore, Oklahoma, as an F5 tornado ripped through this city during the evening of May 3, 1999. (Photograph courtesy of Curtis Carey, NOAA/NWS Public Affairs)